



Sudan University of science and Technology
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Detection of Hepatitis B Virus Infection among Health Care Workers in Aldamer Locality, River Nile State, Sudan

الكشف عن فيروس التهاب الكبد الوبائي (النوع ب) بين العاملين في مجال الرعاية الصحية في محلية الدامر, ولاية نهر النيل, السودان

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الآية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى:

أَوَلَمْ يَتَفَكَّرُوا فِي أَنفُسِهِمْ ۗ مَا خَلَقَ اللَّهُ السَّمَاوَاتِ وَالْأَرْضَ وَمَا بَيْنَهُمَا إِلَّا بِالْحَقِّ وَأَجَلٍ مُّسَمًّى ۗ وَإِنَّ كَثِيرًا مِّنَ النَّاسِ بِلِقَاءِ رَبِّهِمْ لَكَافِرُونَ ﴿٨﴾

صدق الله العظيم

(سورة الروم الآية 8)

Dedication

To my family..

To my friends ..

To my teacher ..

And to every one that support me during education and through life..

Acknowledgements

Thanks to the **ALMIGHTY ALLAH** for giving me the strength to complete this work successfully. Great thanks to my supervisor **Dr.KawtharAbdelgaleil Mohammed Salih** for her valuable advice and great effort.

I would like to thank all those who assisted and encouraged me to complete this research and provided me with the necessary information required to complete this study.

Last but not least many thanks for the Health Care Workers at Aldamer Hospital for their Kindness and cooperation.

Abstract

Hepatitis B infection is one of the world's major infection diseases. This cross-sectional study aimed to determine sero-prevalence of Hepatitis B virus and to determine the possible association between Hepatitis B virus and some risk factor among health care workers in Aldamer Locality River Nile state during a period from July to November 2019.

Structured questionnaire was used to collect both demographic and clinical data, Venous blood (3 ml) was taken from each participant by standard procedure, were put in plain containers to clot then centrifuged at 5000 rpm for 5 minutes and serum was obtained and kept at -20°C until used.

The serum samples were examined by Enzyme Linked Immunosorbent Assay (ELISA) to detect HBsAg. One out of 92 (1.1%) samples was found HBsAg positive by ELISA. The distribution of the positive cases was followed Gender: 1/92 (1.1%) of cases was female, Age: was distributed at age group (20—40) years. Hepatitis B virus were detected in the following group married, non vaccinated, had no blood transfusion, and there who have no history of surgical operation.

The study indicated insignificant association between Hepatitis B infection and effective factor ($P > 0.05$), gender, age, marital status, blood transfusion, surgical operation, renal dialysis, accidental injury (P value: 0.56, 0.32, 0.85, 0.68, 0.92, 0.35, respectively).

This study concluded the frequency of hepatitis B virus among the health workers are rare.

الخلاصة

عدوي الكبد الوبائي ب هي احد الامراض المعدية في العالم . هدفت هذه الدراسة المقطعية الي تحديد نسبة انتشار مرض التهاب الكبد الوبائي بين العاملين في مجال الرعاية الصحية في ولاية نهر النيل محلية الدامر خلال الفترة من يوليو الي نوفمبر 2019 .

عن طريق الاستبيان المحدد جمعت المعلومات الجغرافية و السريرية, اخذت 3 مل من الدم من الوريد بالطريقة المثالية وضعت في وعاء خالي من مضادات التجلط وبعد عملية تجلط العينات فصلت بواسطة جهاز الطرد المركزي 5000 لمدة 5 دقائق وحفظت في درجة حرارة 20°C الي حين استخدامها .فحصت العينات بواسطة تقنية اليزا للكشف عن البروتين السطحي للفروس , وجد ان 92/1 فقط (1.1%) من اصل موجب .كانتوزيعةالحالاتالموجبهبينالذكور(0%) والاناث 92/1 (1.1%) تقعيالفئةالعمرية 20---40 سنة, وكانتوزيعةالحالةمنعيناالمتزوجينوغيرمطعمين ,والذيلميسبقلهمنقلدموعملياتجراحية .

هذه الدراسة اثبتت عدم وجود اهمية احصائية بين الاصابة والعوامل المؤثرة اي انه ليس هناك اي ارتباط بين النوع والعمر والحالة الزوجية ونقل الدم والعمليات الجراحية وغسيل الكلي والجروح اثناء اداء العمل(القيمة الافتراضية: 0.56 , 0.32 , 0.85 , 0.68 , 0.92 , 0.35 , علي التوالي .

خلصت هذه الدراسة الي ان معدل انتشار التهاب الكبد الفيروسي ب نادرا وسط العاملين في مجال الرعاية الصحية.

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List of Abbreviation

CDC	Center for Disease Control and Prevention
ELISA	Enzyme Linked Immune Sorbent Assay
HBeAg	Hepatitis B e Antigen
HBIG	Hepatitis B Immune Globulin
HBV	Hepatitis B virus
HBsAg	Hepatitis B surface Antigen
HCC	HepatoCellular Carcinoma
HCV	Hepatitis C Virus
HCW	Health Care Worker
HIV	Human Immune deficiency Virus
HDV	Hepatitis D Virus
HRP	Horse Radish Peroxidase
PCR	Polymerase Chain Reaction
SPSS	Statistical Package For Social Science
TMP	Tetra MethyleBenzidine
WHO	World Health Organization